

Project Narrative

Name of the Project: Rangeland Riparian Management

Is This a New Project or Request for Continuation?: New

Geographic Area of the Project: Rangeland Riparian Management

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Amount of Funding Requested: \$10,000

Project Need, Description and Expected Outcomes

Rangeland watersheds, riparian areas and streams are a major source of water for Texans. Management of these areas directly influence the well being of the local landowner and downstream users. The health and condition of each riparian area influences water quality and quantity, peak and base flow rates of streams and rivers (flooding), and rate of recharge to aquifers and lakes. Riparian areas are important buffer zones for removing sediment, nutrients, and other potential contaminants originating from upland watersheds and in-stream flood events. Riparian areas are some of the most productive vegetation types found in rangeland watersheds. They are highly prized for their forage, recreational, fish and wildlife, water supply, cultural / historic and economic values. Healthy native riparian areas are necessary habitat for many wildlife species, to remove sediment and nutrient loads and reduce peak flow and downstream flooding. Riparian area degradation is evident throughout Texas rural and municipal landscapes. In many cases riparian areas are purposely degraded or even channelized, especially in urban areas, to quickly allow storm water to move downstream and reduce local flooding. This results in reduced recharge of the flood plain shallow water table, which reduces sustained base flow, thus increases the peak flow and subsequent downstream flooding and damage to other riparian areas and local communities. The frequency of major flood events is increased as well. Healthy riparian areas absorb the impact of flood waters, increase local recharge of shallow and aquifer water tables, and provide valuable green space for urban citizens and productive areas for landowners. A concerted educational program is necessary to prevent further degradation, to restore, and maintain healthy rangeland riparian systems in rural and urban areas in Texas.

Proper Functioning Condition (PFC) is a qualitative method developed by the Bureau of Land Management (BLM), Fish and Wildlife Service (USFW) and Natural Resources Conservation Service (NRCS) to assess the condition of riparian areas. PFC assessments use a consistent approach for considering hydrology, vegetation, and erosion attributes and processes

to determine the overall health of a riparian area. PFC is a state that will allow the system to hold together during high-flow events with a high degree of reliability. This resiliency allows the area to produce desired values, such as forage for livestock, fish and wildlife habitat, water storage and filtration, reduce downstream flooding and native vegetation that helps hold the system in place. Areas not functioning properly cannot sustain these desirable values.

Federal cost-share programs have been developed to help landowners and municipalities restore riparian areas. NRCS is currently developing standards for a CRP type program for rangeland riparian areas. TAEX has not directed educational programs to train clientele on how to manage, restore and maintain healthy riparian systems. Degradation has been observed statewide.

The initial phase of this new program will be to develop needed educational materials on monitoring and maintenance of properly functioning riparian systems, identifying a network of collaborators for future demonstration efforts, developing an advisory committee for issue identification and education needs, providing training for TAEX personnel and seeking grant support.

Four publications will be developed this next year (the advisory committee may identify other publication needs as well):

- **Texas Rangeland Riparian Areas - Types and Benefits** - Describe the types of riparian areas and streams that can be found on rangelands in Texas and the benefits that these areas provide for the landowners and citizens of the state when they are managed as sustainable healthy systems.
- **Are Your Riparian Systems Healthy?** - Develop a guide for clientele to identify PFC indicators to determine the health status of their riparian areas. It will include some discussion on probable causes for degradation and potential BMPs for restoration where needed.
- **Photo Guide to Healthy, At Risk, and Unhealthy Riparian Areas** - This poster/publication will be developed each year for different rangeland regions in Texas. It will show different stages of riparian health and key indicators of PFC for different types of streams in selected vegetation regions. This will supplement the above publication for more effective education of clientele and increase awareness among citizens and youth.
- **Current Knowledge on Restoration of Riparian Areas** - Present current knowledge of restoration techniques and management programs for different types of riparian areas and streams to achieve different clientele goals.

Form an advisory group to help identify critical educational needs, funding sources and potential demonstration sites with representatives from the following agencies/and/or organizations:

- The Texas Riparian Association
- Natural Resources Conservation Service
- Soil and Water Conservation Board
- Army Corps of Engineers
- River Authorities
- United States Geological Survey

- Texas Cooperative Extension Service
- Texas Farm Bureau
- Texas and Southwestern Cattle Raisers Association
- Texas Parks and Wildlife Department
- Texas Department of Agriculture
- “Municipal Storm Water Management” representative
- Region 6 Environmental Protection Agency

With completion of critical needs identification and development of appropriate educational materials, a regional workshop will be conducted to train Extension personnel and appropriate collaborators. The training will focus on assessing PFC, restoration and sustainable management of riparian areas in the selected region. Clientele training through Extension programs- workshops-field days, etc. and establishment of demonstrations will be emphasized in following years as funding is obtained. Also a new region will be initiated “each year” as appropriate until programming is statewide.

As a result of this proposed project, rangeland riparian systems in Texas will receive needed attention by agencies/organizations/landowner groups and citizens to focus resources to restore and promote their sustainable management to provide multiple benefits. Increased collaboration among the above groups should result from this effort. Landowners and citizens will be better able to make informed decisions concerning “their” riparian areas. In the long term, improved upland range watershed management coupled with healthy riparian management should have improved stream water quality, base flow, reduced frequency of damaging floods, and improved livestock, wildlife, and fisheries habitat.

Specific Soil and Water Conservation Issues Addressed

Soil and Water Conservation issues addressed by this proposal are:

- riparian zone management
- wetlands management
- water management and conservation
 - resource management
 - conservation buffer strips
- brush control for soil, water and wildlife management
 - land management related to soil and water conservation
 - youth educational programs about water conservation
 - “green” program concepts and policies

Collaboration

Person/position	Agency/organization	Function
TAEX Advisory Team	as identified above	identify critical educational needs, potential demonstration sites, funding sources, review publication materials, assist with organization and conduct of workshop
Dr. Robert Knight, Associate Professor	RLEM, TAES	Resource person, review publications
Dr. Brad Wilcox, Associate Professor	RLEM, TAES	Resource person, review publications

Submitted by _____
(P.I. signature)

Approved for submission _____
(Unit Head signature)